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(12) **United States Patent**  
Larsen et al.

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(54) **FUSIONS OF P-SELECTIN LIGAND  
PROTEIN AND POLYNUCLEOTIDES  
ENCODING SAME**

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **08/713,556**

(22) Filed: **Aug. 30, 1996**

#### Related U.S. Application Data

(63) Continuation-in-part of application No. 08/428,734, filed on Apr. 25, 1995, now Pat. No. 5,843,707, which is a continuation-in-part of application No. 08/316,305, filed on Sep. 30, 1994, now abandoned, which is a continuation-in-part of application No. 08/235,398, filed on Apr. 28, 1994, now abandoned, which is a continuation-in-part of application No. 08/112,608, filed on Aug. 26, 1993, now abandoned, which is a continuation-in-part of application No. 07/965,662, filed on Oct. 23, 1992, now abandoned.

(51) Int. Cl.<sup>7</sup> ..... **C12N 15/00**

(52) U.S. Cl. .... **536/23.4; 536/23.1; 536/23.5; 530/350; 530/387.3; 530/395; 435/69.7**

(58) Field of Search ..... **536/23.4; 530/350; 530/395; 514/2; 435/69.1, 69.7, 320.1, 325, 252.3, 254.11**

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(57) **ABSTRACT**

Fusions proteins comprising P-selectin ligand proteins are disclosed, including fusions with immunoglobulins, BMPs, AGP and IL-11. Polynucleotides encoding such fusions are also disclosed.

**16 Claims, 30 Drawing Sheets**



US005510102A

**United States Patent** [19]**Cochrum**[11] **Patent Number:** **5,510,102**[45] **Date of Patent:** **Apr. 23, 1996**[54] **PLASMA AND POLYMER CONTAINING  
SURGICAL HEMOSTATIC ADHESIVES**[75] **Inventor:** Kent C. Cochrum, Davis, Calif.[73] **Assignee:** The Regents of the University of  
California, Oakland, Calif.[21] **Appl. No.:** 377,775[22] **Filed:** Jan. 23, 1995[51] **Int. Cl.<sup>6</sup>** ..... A61K 38/36; A61L 25/00[52] **U.S. Cl.** ..... 424/78.08; 424/530; 602/52;  
128/DIG. 22[58] **Field of Search** ..... 514/772.2; 424/78.08,  
424/530

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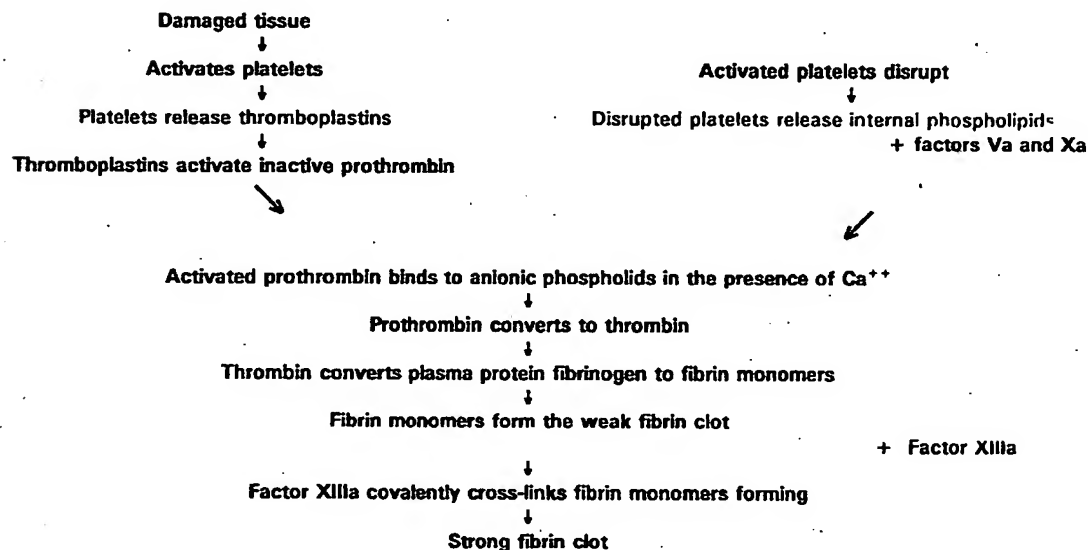
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*Primary Examiner*—Peter F. Kulkosky*Attorney, Agent, or Firm*—Hana Verna[57] **ABSTRACT**

Autologous platelet-rich plasma and a biocompatible polymer containing hemostatic adhesive agents. The agents have strong hemostatic properties when applied to a bleeding wound or vessel.

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**17 Claims, 2 Drawing Sheets****PHYSIOLOGICAL PROCESS OF COAGULATION**

# United States Patent [19]

McEver

US005378464A

[11] Patent Number: 5,378,464

[45] Date of Patent: Jan. 3, 1995

- [54] MODULATION OF INFLAMMATORY RESPONSES BY ADMINISTRATION OF GMP-140 OR ANTIBODY TO GMP-140
- [75] Inventor: Rodger P. McEver, Oklahoma City, Okla.
- [73] Assignee: Board of Regents of the University of Oklahoma, Norman, Okla.
- [21] Appl. No.: 320,408
- [22] Filed: Mar. 8, 1989
- [51] Int. Cl.<sup>6</sup> ..... A61K 39/395; A61K 37/02
- [52] U.S. Cl. .... 424/143.1; 514/8
- [58] Field of Search ..... 514/8, 23; 530/350, 530/381, 395, 387, 387.1, 387.5, 388.22; 424/85.8

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## [57] ABSTRACT

A method using compounds inhibiting binding reactions involving GMP-140 to modulate an inflammatory response. The method is based on the discovery that GMP-140, released from the storage granules of platelets, endothelial cells, and megakaryocytes, and redistributed to the surface of the cells within seconds of activation by mediators such as thrombin, ionophores or histamine, binds to a ligand on neutrophils, and the plasma proteins C3b and protein S. Adhesion of the cells following activation is blocked directly by administration of antibody to GMP-140 or its ligand, or by competitive inhibition by administration of soluble GMP-140, the GMP-140 ligand, or the specific carbohydrate portion of the ligand bound by GMP-140.

9 Claims, 6 Drawing Sheets

